

CLAIMS

1. A piste-maintenance tracklaying vehicle (1) comprising an internal combustion engine (2) which is drivingly connected, preferably via a gear (3, 13, 14), to a drive sprocket (4) of each track (5), and accessory drives (6) for additional devices (7, 8, 9) that are mountable on said tracklaying vehicle (1), such as rotary snow plow, front snow plow blower, or the like, and/or for vehicle components (15, 16, 17), such as a tilting device for a platform and driver's cab or track tensioner, **characterized in** that said internal combustion engine (2) is connected via a generator (10) and at least one electric motor (11, 12) and possibly a gear (13, 14) to each drive sprocket (4), and in overrun mode said electric motor (11, 12) is switchable as a current generator for accessory drives (6) designed as electrohydraulic or electric drives (18, 19), at least said electric drive (19) for a shaft of said rotary snow plow being synchronized with the electric motor (11, 12) of said drive sprocket (4).
2. The tracklaying vehicle according to claim 1, **characterized in** that each drive sprocket (4) is drivingly connected to a separate electric motor (11, 12).
3. The tracklaying vehicle according to claim 1 or 2, **characterized in** that a planetary gear (13, 14) is arranged between electric motor (11, 12) and drive sprocket (4), and a steering gear (3) is arranged in the case of only one electric motor (11, 12) for the drive sprocket (4) of both tracks (5).
4. The tracklaying vehicle according to at least one of the preceding claims, **characterized in** that a hydraulic medium for said electrohydraulic drive (18) is a medium based on water.

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5. The tracklaying vehicle according to at least one of the preceding claims, **characterized in** that said tracklaying vehicle (1) is designed with an energy buffer (20) which can be fed by said generator (10) or by said electric motor (11, 12) which operates as a generator.
6. The tracklaying vehicle according to at least one of the preceding claims, **characterized in** that said tracklaying vehicle (1) comprises an electronic high-performance means (21) for controlling travel engines or motors (2, 11, 12) and/or accessory drives (6).
7. The tracklaying vehicle according to at least one of the preceding claims, **characterized in** that said internal combustion engine (2) comprises an electronic engine control.
8. The tracklaying vehicle according to at least one of the preceding claims, **characterized in** that at least the electrohydraulic function units (22, 23) for performing vehicle functions (15, 18a), for instance of the front and rear device carrier, are arranged in a decentralized manner and comprise an electric motor, a pump, a control block and a hydraulic medium tank.
9. The tracklaying vehicle according to any one of the preceding claims, **characterized in** that said electronic high-performance means (21) is centrally arranged in said tracklaying vehicle (1) for distributing energy to all consumers (6 to 9, 11, 12, 15 to 24) and for energy feedback.
10. The tracklaying vehicle according to at least one of the preceding claims,

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characterized in that all components (2, 3, 6 to 12, 15 to 25) of said tracklaying vehicle are composed in the manner of modules.

11. The tracklaying vehicle according to at least one of the preceding claims, **characterized in** that said tracklaying vehicle (1) comprises a parking brake, in particular as a multidisc brake integrated in the planetary gear (13, 14), which is operable by a hydraulic medium based on water.
12. The tracklaying vehicle according to at least one of the preceding claims, **characterized in** that said tracklaying vehicle (1) comprises a winch (24) with an electric drive (19).
13. The tracklaying vehicle according to at least one of the preceding claims, **characterized in** that said tracklaying vehicle (1) comprises a winch (24) with an electric drive (19) designed for feeding back energy during downhill driving.
14. The tracklaying vehicle according to at least one of the preceding claims, **characterized in** that said tracklaying vehicle (1) comprises an energy feeding means for the supply of external energy
15. The tracklaying vehicle according to at least one of the preceding claims, **characterized in** that said energy feeding means is designed as a trailing cable or as a coupling system which is adapted to be coupled with contact wires or current rails.
16. The tracklaying vehicle according to at least one of the preceding claims, **characterized in** that said tracklaying vehicle (1) has an interconnection means

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for the energetic connection to at least one further tracklaying vehicle.

17. The tracklaying vehicle according to at least one of the preceding claims, **characterized in** that a heating means of said tracklaying vehicle (1) is fed with waste feed from the motors (11, 12) of the hydraulic system (18) and/or said electronic high-performance means (21).
18. The tracklaying vehicle according to at least one of the preceding claims, **characterized in** that said tracklaying vehicle (1) comprises at least one setpoint transmitter for at least the desired traveling speed.
19. The tracklaying vehicle according to at least one of the preceding claims, **characterized in** that said electronic high-performance means (21) or said vehicle control unit, respectively, is connected to said setpoint transmitter and comprises an electronic evaluation means at least for determining consumption-optimum speeds for said internal combustion engine (2).
20. The tracklaying vehicle according to at least one of the preceding claims, **characterized in** that the gear ratio of snow plow shaft to drive sprocket is adjustable.
21. The tracklaying vehicle according to at least one of the preceding claims, **characterized in** that a diagnosis means is arranged on said tracklaying vehicle (1) for maintenance and inspection of the electric control unit (21, 22, 23).
22. The tracklaying vehicle according to at least one of the preceding claims, **characterized in** that said setpoint transmitter is designed as an accelerator

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for controlling speed and for braking purposes.

23. The tracklaying vehicle according to at least one of the preceding claims, **characterized** in that the predetermined setpoint is a setpoint of the electric motor speed.
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24. The tracklaying vehicle according to at least one of the preceding claims, **characterized in** that the setpoint is convertible by the electronic means into a speed which is predetermined for said internal combustion engine.
25. The tracklaying vehicle according to at least one of the preceding claims, **characterized in** that said electronic means comprises a characteristics control unit for determining the consumption-optimum speed.
26. The tracklaying vehicle according to at least one of the preceding claims, **characterized in** that said vehicle has a safety logic for starting and stopping purposes, said logic sensing at least the position of a traveling direction switch, the actuation of said accelerator and of said parking brake.
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27. The tracklaying vehicle according to at least one of the preceding claims, **characterized in** that said parking brake is automatically operable.
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